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ABSTRACT

This publication is the second in a series intended to disseminate program ideas tried successfully at one Job Corps Center and of likely interest to other centers. Contained in this issue are materials of value in tutoring math and reading to corps-members whose first language is Spanish. (Author/SK)

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Job Corps

Center-Developed Training Programs

Spanish Tutorial Materials

- Math
- Reading

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U. S. DEPARTMENT OF LABOR
MANPOWER ADMINISTRATION
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PREFACE

This publication is the second of a series to disseminate valuable program ideas tried successfully at one Center and of likely interest to others. These are program suggestions, not mandatory directions.

Contained in this issue are materials of value in tutoring corpsmembers whose first language is Spanish. The ideas represent the work of Arturo Pinon and Peter Jurado, graduate students at the University of Texas at El Paso, who worked as research assistants at the El Paso Residential Manpower Center during the summer of 1972.

The Office of Program Development in the Job Corps national office welcomes submission of other developmental educational and/or vocational courses and activities applicable to other Job Corps centers.

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EVALUATION OF PROGRAM MATERIALS

Mary S. Young

Two graduate students at the University of Texas at El Paso, Arturo Pinon and Peter Jurado, were selected to serve as research assistants in the 1972 summer program funded by Job Corps Office of Program Development. Their purpose was to provide tutorial assistance to corpsmen at the El Paso Residential Manpower Center experiencing difficulty with the Job Corps mathematics and reading curriculum due to a lack of English language skills. A secondary goal of the program was the development of supplementary curriculum materials which could be used in conjunction with the baseline curriculum in order to facilitate the acquisition of reading and math skills by Spanish-speaking corpsmen.

Mr. Pinon was assigned to the mathematics portion of the program, and Mr. Jurado was given the responsibility of working in the reading curriculum. Both research assistants began work with the program on June 12, 1972, for a twelve week period ending September 1, 1972.

Corpsmembers benefitting from the tutorial assistance of this program have evidenced increased progress in academic skills, in addition to the more intangible benefits deriving from the increased individualized attention, such as the development of higher degrees of educational motivation. Both research assistants were quickly able to develop a very positive rapport with the majority of corpsmen. The addition of these two staff members to the Basic Education department also decreased the corpsman/staff ratio in reading and mathematics classes, thereby enabling non-participating corpsmen to reap the benefits of more individualized instruction from center instructors.

The various teaching techniques found to be successful in this program and the supplementary materials, specifically the games and the English-Spanish vocabulary lists, are presently being utilized in the reading and math classes and have been of substantial assistance to instructors and corpsmen. It is expected that continued benefits will be reaped through their use.

Other positive results of this program have been the strengthening of the liaison between the University of Texas at El Paso and the El Paso Residential Manpower Center and the enhancement of the center's community relations through the personal contacts of the two research assistants. Both Mr. Pinon and Mr. Jurado felt that their professional horizons were expanded through their experience in this program. They were pleased to have had the opportunity to become knowledgeable of the Job Corps program and particularly of the center in the El Paso community.

A final benefit of this summer program was the opportunity provided center management to observe the instructional capability of Mr. Peter Jurado during the three month period and, subsequently, to obtain his services as a permanent Basic Education reading instructor at the El Paso Residential Manpower Center. It should be emphasized that both he and Mr. Pinon provided outstanding services to the center while employed in the summer program. Mr. Pinon would also have been offered a permanent teaching position at the center, except that he had accepted a prior committment to teach in the El Paso public school system. His position in one of the local high schools should also prove an asset to the center in regards to school and community relations.

Mrs. Young is Supervisor of Basic Education at the El Paso Residential Manpower Center.

MATHEMATICS PROJECT

Arturo Pinon

During the first few weeks of the project I considered various types of supplementary materials that I might develop which would aid the corpsmen with English language difficulty in increasing their rate of progress in their math classes and subsequently decided to develop a vocabulary list of English words translated into their appropriate Spanish meanings from each of the math booklets in the Job Corps curriculum. The purpose of this vocabulary list was to help these corpsmen save valuable class time and to enable them to have the appropriate, accurate meaning for each particular word.

Secondly, I located and developed a number of appealing mathematical games to help these corpsmen by reinforcing the math skills in the basic arithmetic operations and spatial relations. This also provided variety in the daily classroom routine, thereby increasing the students' interest in math skills.

Some of these math games were obtained from two handbooks, A Mathematics Laboratory Handbook for Secondary Schools and A Handbook of Aids for Teaching Junior-Senior High School Mathematics, both written by Krulik.

During the final six weeks of the program, these math games were used as a portion of my tutorial sessions. They were well received by corpsmen and appeared to be instructionally helpful. The math games are described in detail on the following pages.

VOCABULARY LIST

SA1 - 1 & 2

cents - centavos

dime - diez centavos

one - uno

ten - diez

test - examen, prueba

VOCABULARY LIST

SA2 - 1 & 2

add - suma, agregue

always - siempre

change - cambie

comma - coma

first - primero

from - de

hundred - cien

left - mano izquierda

means - quiere decir

millions - millones

numbers - numeros

ones - primeros

put in - ponga dentro

right - mano derecha

tens - diez

test - examen

thousand - mil

turn - voltear

write - escriba

VOCABULARY LIST

SA3 - 1 & 2

add - sume, agregue

always - siempre

and - y

answer - respuesta

because - porque

borrow - pedir prestado

both - ambos, los dos

bring down - baje

but - pero

carry - llevar

cents - centavos

check - revise

circle - circule

column - columna

count - cuente

dime - diez centavos

finish - terminar

following - siguientes

look - vea

means - quiere decir

others - otros

right - correcto

show - demuestra

sign - simbolo

so - asi que

some - algunos

space - espacio

stand - representa

subtract - restar

tells us - nos dice

think - piense

times - veces

under - debajo de

what - que

wrong - incorrecto

VOCABULARY LIST

MMT01 bk#1

across - atravez

answer - respuesta; conteste

apples - manzanas

arrows flechas

asked - pregunto

ball - rueda

below - abajo

blocks - bloques

bottom - al pie; fondo

box - bloque, cuadro

boys - muchachos

bricks - ladrillos

bugs - insectos

copy - copiar

course - curso

dot - punto

draw - dibuje

equal - igual

equation - equacion

find - encuentre, busque

group - grupo

hammers - martillos

here - aqui

letter - letra

line - linea

minus - restar

pick - escoja

questions - preguntas

same - mismo

stars - estrellas

times - por

VOCABULARY LIST

MMT02 bk#2

can - lata

factors - factores

sticks - palo, vara

VOCABULARY LIST

MMT03 bk#3

dot - punto

each - cada

equal - igual

equations - equaciones

factors - factores

group - grupo

itself - si mismo

pick - escoja

times - veces

VOCABULARY LIST

MMT04 bk#4

across - atravez

down - hacia abajo

dots - puntos

VOCABULARY LIST

SA5 - 1 & 2 bk#5

always - siempre

bring down - abaje

equals - igual, equivale

front - frente

guess - adivine

help - ayude

how many? - ?cuantos?

itself - si mismo

larger - mas grande

means - quiere decir

never - nunca

next - el siguente

opposite - opuesto

over - sobre

remainder - sobrante

remember - recuerde

since - puesto que; desde que

smaller - mas pequeño

so - asi; tan

start - empezar

there are - hay

think - piense

try - tratar

what-que

write - escriba

VOCABULARY LIST

MFT 07 bk#7

air - aire, viento

apple - manzana

ate - comio

baked - cocino

black - negro

block - bloque

board - tabla de madera

can - lata

cat - gato

children - niños

circle - circulo; circule

clown - payazo

copy - copee

dot - punto

eighth - octavo

elephant - elefante

equal - igual

family - familia

fourths - cuartos

group - grupo

halve - mitad

hay - paja

jacks - juguete

mother - madre

person - persona

picture - retrato

pie - pastel

pumpkin - calabaza

same - mismo

separate - separar

shaded - marcado - oscuro

sick - enfermo

size - tamaño

snow cone - nieve raspada

somersault - voltereta

square - cuadro

striped - listado

Thanksgiving dinner - Cena de Dia -- de Accion de Gracias

unequal - desigual

watermelon - sandia

whole - entero

yesterday - ayer

VOCABULARY LIST

MFT 08 bk#8

amount - cantidad

banana - platano

bicycle - bicicleta

cake - bizcocho, torta, pastel

can - lata

cheese - queso

Christmas cards - tarjetas de Navidad

denominator - denominador

drop - dejar caer, bajar

ducks - patos

easy - facil

foot - pie

garden - jardin

gorilla - gorila

hand - mano

head - cabeza

homework - tarea

improper fraction - fraccion impropia (el numerador siempre es mas grande que el denominador)

inch - pulgada

match - corresponde

means - quiere decir

mile - milla

mixed number - numero mixto (un numero entero y una fraccion)

number - numero

numerator - numerador (numero de arriba de una fraccion

planting seed - plantando semilla

pony tail - cola de caballito - potrillo

ribbon - liston

riddle - acertijo, adivinanza

sentence - oracion

shell - concha

stuck - atorado

top - arriba

VOCABULARY LIST

MFT 11

banana - platano

candle - vela

chocolatemilk - leche con chocolate

figure - figura

giraffe - girafa

learn - aprender

match - igualar lo correspondiente

measuring cup - taza de medir

pumpkin - calabaza

spelling - deletrear

tiger - tigre

walk - caminar

white - blanco

VOCABULARY LIST

MFT 12 bk#12

boxes - cajas

cookies - galletas

cows - vacas

cup - taza

dollar - dolar

draw - dibuje

ice cream cone - cono de nieve

Kindergarden - Jardin de Niños

match - igualar con el correspondiente

milk - leche

most - mayor parte

pancakes - tortilla de harina; panque

pencil - lapiz

pennies - centavos

rabbit - conejo

sandwich - bocadillo

school - escuela

sold - vendido

string - cordon, cuerda

teacher - maestra

tops - trompos

toys - juguetes

true - cierto

whistle - silbido, pito

paint - pintura

so forth - asi sucesivamente

VOCABULARY LIST

MFW01 bk#13

about - tocante a

altogether - todo junto

always - siempre

amount - cantidad

arrangement - arreglo

arrive - llegar

as - como

below - abajo

blank - en blanco

both - ambos; los dos

butter - mantequilla

call - llamar

candy bar - barra de dulce

chart - grafica

circle - circulo, circule

column - columna

cut - cortar

decide - decida

determine - determine

different - diferente

discuss - discutir

distance - distancia

easily - facilmente

equivalent - equivalente

even number - par

example - ejemplo

fact - dato, hecho

fill - llene

following - lo siguiente

fracture - fractura

fragile - fragil

fragment - fragmento

frames - marcos

fudge - dulce de chocolate

halves - mitades

illustrate - ilustrar

inch - pulgada

indicate - indicar

involve - envolver

learn - aprender

leaving - saliendo

lowest terms - terminos mas bajos

marks - marca

mathematician - matematico

meaning - quiere decir

mentally - mentalmente

missing - falta

nail - clavo

nevertheless - aun sin embargo

object - objeto

omit - omitir

original - original

organize - organizar

package - paquete

VOCABULARY LIST

MFW01 Bk #13 Continued

pie - pastel

point - punto

practice - practicar

preceding - anterior

question - pregunta

quicker - mas rapido

recipe - receta

reduce - rebajar

remain - sobrante

remove - remover

rest - resto

resulting - resultado

rule - regla

scratch paper - papel escrape

slice - rebanar

sometimes - a veces

substitute - substituir

surprised - sorprendido

therefore - de modo que

thus far - hasta aqui

value - valor

whether - si; ya sea que

whole - entero

without - sin

wish - desear

VOCABULARY LIST

MFW02 BK#14

altogether - todo junto

arrange - arregle; ponga

beneath - debajo

borrow - pedir prestado

both - ambos; los dos

butcher shop - carniceria

carpenter - carpintero

column - columna

composed - compuesto

dinner - cena

entire = todo

even though - aun cuando

following - lo siguiente

frames - marcos

frankfurters - salchichas

however - sin embargo

improper fraction -fraccion impropia

inverse - inverso

key - llave; clave

leave - saliendo

left - mano izquierda

like fractions - fracciones con el mismo denominador

lowest terms - terminos mas bajos

manner - manera

meat - carne

minuend - numero de arriba el problema de restar

mixed number - numero entero y una fraccion

pattern - patron

place - ponga

practical - practico

preceding - anterior

procedure - procedimiento

proper fractions - fracciones con el numerador mas chico que el denominador

removing - remover

ribbon - liston

roast beef - rosbif

row - fila

sample - ejemplar

similarly - similarmente

skirts - faldas

state - declarar, indicar

subtrahend - numero de abajo en problema de restar

sum - suma

summarize - resumar

thus - asi

try - trate

unlike fractions - fracciones con denominador diferen

unreduced - sin rebajar

unusual - no usual

walk - caminata

VOCABULARY LIST

MFW03 BK #15

1. Above - arriba
2. Across - a travez de
3. Align - alinear
4. Amount - cantidad
5. Any - cualquier
6. Appear - aparecer
7. Bananas - platanos
8. Baton - vara
9. Beat - ganar
10. Because - porque
11. Beneath - debajo
12. Big - grande
13. Board - tabla de madera
14. Barrow - pedir prestado
15. Boys - muchachos
16. Charts - graficas
17. Check - revisar
18. Christmas - Navidad
19. Classroom - sala de clase
20. Contents - contenido
21. Convenience - convenencia
22. Crate - jaula
23. Cup - taza
24. Curtains - cortinas
25. Diameter - diametro
26. Difference - diferencia
27. Discover - discubrir
28. Drawing - dibujo
29. Edge - orilla
30. Equal - igual
31. Evening - noche
32. Eventually - eventualmente
33. Example - ejemplo
34. Finding - buscando
35. Finish - terminar
36. Following - lo siguiente
37. Forget - olvidar
38. Gain - aumentar
39. Garage - garaje
40. Girls - muchachas
41. Grew - crecio
42. High jump - salto de altura
43. His - su
44. However, sin embargo, no obstante
45. Icebox - refrigerador
46. Involving - envolver
47. Itself - si mismo
47. Keeps - retener
48. Keeps - retener
49. Length - longitud
50. Like fraction - fracciones con el mismo denominador

51. Living room drapes - cortinas de la sala
52. Measured - medido
53. Measurement - medida
54. Mentally - mentalmente
55. Midnight - medianoche
56. Minuend - numero de arriba en problema de restar
57. Missing - falta, ausente
58. Mix - mezcla
59. Money - dinero
60. Morning - manana
61. Multiple - multiple
62. Neighborhood - vecindad
63. Notice - fijese
64. Otherwise - de otro modo
65. Ounces - onzas
66. Partial - parte
67. Previous - previo, anterior
68. Place - ponga
69. Pounds libras
70. Proceed - procedir
71. Quickly - rapidamente
72. Radius - radio
73. Raided - Invadir
74. Rearrange - arreglar de nuevo
75. Recent - reciente
76. Regardless - sin hacer caso de
77. Relays - carrera de relevos
78. Remaining - Sobrante
79. Remember - recordar
80. Required - requerido
81. Rewrite - escribir de nuevo
82. Save - ahorrar
83. Saws - aserrar
84. Sheet - hoja
85. Showing - demostrar
86. Since - puesto que
87. Skip - saltear
88. Slumber - dormitar
89. Small - pequeno
90. Snack - merienda, bocadillo
91. Spilled - derramo
92. Statistics - estadisticas
93. Steps - pasos
94. Still - todavia
95. Subtrahend - numeros de abajo en problema de restar
96. sugar - azucar
97. Therefore - por eso, por lo tanto
98. Time yourself - mida el tiempo
99. Too - muy
100. Trim - adorno
101. Uncut - sin cortar
102. Unless - a menos que

103. Unlike fractions - fracciones con diferente denominador
104. Watch - ver
105. Weight - pesar
106. Whenever - siempre que, cada vez
107. Wherever - dondequiera
108. Written - escrito

VOCABULARY LIST

MFW04 BK #16

1. Although - aunque
2. Answer - respuesta, responda
3. Apply - aplicar
4. Arrange - arreglar
5. Basic - basico
6. Beneath - debajo
7. Cancel - Cancelar
8. Careful - cuidado
9. Certain - Cierto
10. Change - cambiar
11. Check - revisar
12. Column - columna
13. Common - comun
14. Consider - considerar
15. Determine - determinar
16. Drawing - dibujo
17. Easier - mas facil
18. Either - uno u otra
19. Examine - examinar
20. Exchange - intercambiar
21. Expressed - expresado
22. Following - lo siguiente
23. Form - forma
24. Frame - marco, cuadro
25. Half - mitad
26. Instead - en vez
27. Invert - invertir
28. Involve - envolver
29. Last - ultimo
30. Manner - manera
31. Means - quiere decir
32. Method - metodo
33. Mistake - error, equivacacion
34. Necessary - necesario
35. Need - necesidad
36. Notice - fijese
37. Observe - observar
38. Picture - retrato
39. Pile - monton
40. Practice - practicar
41. Previous - Anterior, previo
42. Proceed - proceder
43. Produce - producir
44. Quicker - mas rapido
45. Recipe - receta
46. Reduce - rebajar
47. Related - relacionado
48. Remember - recordar
49. Replace - reponer
50. Represent - representar
51. Response - responder
52. Review - Revisar , repaso
53. Rewrite - escribir de nuevo
54. Several - varios

'55. Sign - seña, simbolo

56. Similarly - similarmente

57. Smaller - Mas pequeño

58. Solution - solucion

59. Solve - resolver

60. Stated - declarado

61. Studied - estudiado

62. Suppose - suponer

63. System - sistema

64. Together - junto

65. Transferring - traspasando

66. Usually - usualmente

67. Whether - si, ya sea que

68. Written - escrito

VOCABULARY LIST

MFW05 BK #17

1. Accurately - correctamente
2. Adopted - adoptado
3. Amounts - cantidades
4. Appears - aparece
5. Approximately - aproximadamente
6. Arrive - llegar
7. Assignment - asignacion
8. Because - porque
9. Chapter - capitulo
10. Circle - circulo, circule
11. Complete - completar
12. Complex - complejo
13. Dealing - tratando
14. Directions - direcciones
15. Doubt - duda
16. Eliminated - eliminado
17. Encounter - encuentro
18. Enough - bastante
19. Exactly - exactamente
20. Expression - expresion
21. Famous - famoso
22. Formulas - formulas
23. Illustrates - ilustra
24. Indicate - indicar
25. Ingredients - ingredientes
26. Itself - si mismo
27. Larger - mas grande
28. Letter - letra
29. Measure - medir
30. Merely - meramente, solo
31. Next - en seguida
32. Practical - practico
33. Previous - previo, anterior
34. Regardless - sin hacer caso de
35. Remain - sobrante
36. Replace - reponer
37. Require - exigir, requerido
38. Result - resultado
39. Revolution - revolucion
40. Rotate - dar vuelta, girar
41. Rule - regla
42. Section - seccion
43. Solve - resolver
44. Sometimes - algunas veces
45. Specific - especifico
46. Step - paso
47. Strange - extrano
48. Studied - estudiado
49. Temperature - temperatura
50. Unchanged - sin cambio
51. Valuable - valioso
52. Wish - desear

VOCABULARY LIST

MDT 01 BK #1

1. After - despues
2. Below - abajo
3. Bottom - base, fundo
4. Change - cambiar
5. Corner - esquina
6. Dot - punto
7. End - final
8. House - casa
9. Place - posicion, cifra
10. Numerator - numerador
11. Reduced - rebajar
12. Top - arriba
13. Upper right - arriba a la derecha
14. Whole - entero
15. Zero - cero
16. Lowest term - terminos mas bajos

VOCABULARY LIST

MDT 02 BK #2

1. End - final
2. Enough - bastante
3. Outside - afuera
4. Over - sobre, encima de
5. Value - valor

VOCABULARY LIST

MDT 03 BK#3

1. Put - ponga
2. Quotient - respuesta de problema de division
3. Same - mismo
4. Underlined - subrayado
5. Until - hasta

VOCABULARY LIST

MDT 04 BK #4

1. Arms - brazos
2. Average - promedio
3. Broom - escoba
4. Buy - Comprar
5. Caret - simbolo para decimales
6. Fish - Pescado
7. Funny - chistoso, comico
8. Jump - brincar
9. Landed - aterrizo
10. Lowest terms - terminos mas bajos
11. Miles - millas
12. Penguins - pinguinos
13. red-eyed - de ojos rojos
14. Travel - viajar
15. Witch - bruja
16. Worm - gusano

VOCABULARY LIST

MDT 05 BK #5

1. Anteater - oso hormiguero
2. Ball-point pen - pluma
3. Candy bar - bara de dulce
4. Chocolate milk - leche con chocolate
5. Count - cuente
6. Enough - bastante, suficiente
7. Factors - factores
8. Front - frente
9. Gallons - galones
10. Grasshopper - chapulin, saltamontes
11. Here - aqui
12. Hope - esperanza
13. Marked off - marcado
14. Pet cow - vaca domestica
15. Purple cow - vaca morada
16. Right - correcto
17. Rule - regla
18. See - ver
19. Together - junto
20. Wood - madera
21. Woodchuck - pajaro

VOCABULARY LIST

MDT 06 BK #6

1. After - despues
2. Altogether - todo junto
3. Arrows - flechas
4. Blue - azul
5. Breakfast - desayuno
6. Catch - coger
7. Centipede - ciempies (gusano)
8. Cold - resfrio
9. Copy - copear
10. Dinner - cena
11. Draw - dibujar
12. Each - cada
13. Earth - Tierra
14. Election - elecion
15. First - primero
16. Fourth - cuarto
17. Friday - viernes
18. Hand - mano
19. House - casa
20. Inches - pulgadas
21. Learn - aprender
22. Left - dejar fuera
23. Line - linea
24. Lunch - comida
25. Mouse - raton
26. Octopus - pulpo
27. Pair - par
28. Rat - rata
29. Saturday - sabado
30. Second - segundo
31. Shake hands - saludo de manos
32. Shoes - zapatos
33. Supercat - super gato
34. Third - tercero
35. Through - atravez de, por
36. Thursday - jueves
37. Where - done
38. Yards - yardas

VOCABULARY LIST

MDT 07 BK #7

1. Borrow - pedir prestado
2. Change - cambiar
3. elephants - elefantes
4. Farther - mas lejos
5. Ice cream cone - cono de nieve
6. Jumping contest - concurso de saltos
7. Monday - lunes
8. Race - carrera
9. Remember - recordar
10. Scored - escor
11. Telephone poles - poste de telefono
12. Termites - insecto
13. Terrible - terrible
14. Tiddlywinks - juego
15. Tuesday - martes
16. Value - valor
17. Win - ganar, triunfar
18. Saturday - sabado

MDT 08 BK #8

1. first name - primer nombre
2. last name - apellido

VOCABULARY LIST

MDT 10 BK#10

1. Altogether - todo junto
2. As - como
3. Back - detras de
4. Bike - bicicleta
5. Both - ambos, las dos
6. Common fraction - fraccion comun
7. Count - contar
8. Decimal fraction - fraccion decimal
9. End - final, fin
10. Farther - mas lejos
11. Only - solamente, solo
12. Ride - viajar
13. Tell - decir
14. Then - entonces

VOCABULARY LIST

MEJ03 PERCENTAGES

Also - tambien

Answers - repuestas

Any further - cualquiera mas

Anything - alguna cosa

Below - abajo

Blank - en blanco

Book - libro

Botton - fondo

Change - cambiar

Check - revisar

Choose - escoger

Contain - contener

Deals - trata

Dropping - quitando

Different - diferente

Each - cada

Easier - facilmente

Easy - facil

Example - ejemplo

Express - expresar

Figure - figura

Fill in - llenar

First - primero

Follow - seguir

Fraction - fraccion

Games - juegos

Learned - aprendio

Left - mano izquierda

Means - quiere decir

Missing - falta

Often - frecuente, seguido

Percent - pro ciento

Played - jugaron

Remember - recordar

Right - mano derecha

Same - igual que

School - escuela

Science - ciencia

Second - segundo

Shaded - obscuro

Sign - senal, simbolo

Solve - resolver

Sometimes - algunas veces

Squares - cuadros

State - declare, indique

Steps - pasos

Such as - tal como

Therefore - por lo tanto

Total - total

Way - manera

Which - que, cual

Won - ganaron

Writing - escribiendo

VOCABULARY LIST

MEJ 04

Back - final, detras

Because - por que

Before - Antes

Calendar - calendario

Checking - revisando

Cups - tazas

Days - dias

Equals - igual, equivale

Finish - terminar

Foot - pie

Heavy - pesado

Hours - horas

Inch - Pulgada

Left over - sobrante

Length - longitud

Liquid - liquido

Make sure - asegurese

Mark - marca

Measurements - medidas

Minute - minuto

Months - meses

Order - orden

Ounce - onza

Pint - pinta

Pound - libra

Process - procedimiento

Purposes - propositos

Quart - cuarto

Regrouping - agrupar de nuevo

Remainder - sobrante

Review - repaso

Seconds - segundos

Sentence - oracion

Since - desde que

Time - tiempo

Trainee - aprendiz

Under - debajo

Units - unidades

Weeks - semanas

Weight - peso

Whole - entero

Yard - yarda

Years - años

VOCABULARY LIST

MRB01 (1-5)

Abbreviate - abreviatura

Accuracy - exactitud

Accurately - exatamente

Angle - angulo

Arrow - flecha

Ball - bola

Bar - barra

Between - entre

Bowling - boliche

Calculation - Calculo

Circle - Circulo

Circumference - circumferencia

Closer - mas cerca

Combination - combinacion

Composed - compuesto

Continuous - continuo

Corner - esquina

Crooked - torcido

Cross - cruzar

Curved - curvado

Degree- grado

Diagonal - diagonal

Diameter - diametro

Dimension - dimension

Distance - distancia

Division - division

Dotted line - linea de puntos

Drawing - dibujo

Drill - taladro

Edge - orilla

Engineering - ingenieria

Equilateral - triangulo de 3 lados iguales

Expressed - expresado

Fence - cerco

Field - campo

Figure - figura

Flat - plano

Flexible - flexible

Form - forma

Groove - acanaladura

Half - mitad

Index - indice

Inside - interior, dentro

Isosceles - triangulo con dos lados iguales

Label - etiqueta, llamar

Line - linea

Locate - localizar

Matches - igualar con correspondiente

Means - quiere decir

Minus - menos

Minutes - minutos

Missing - falta

Object - objeto

Opposite - opuesto

Outside - exterior

Perimeter - perimetro

Picture - retrato

Piece - Pedazo

Plane - plano

Plus - mas

Pointing - apuntando

Quadrangle - figura con 4 lados

Radius - radio

Rectangle - rectangulo

Require - Requerir

Right - recto

Round - redondo

Raw - hilera

Rule - regla

Scale - escala

Set - juego

Shortest - mas corto

Shown - demostrado

Side - lado

Slot - abertura

Small - pequeño

Square - cuadro

Stands - representa

Steel - acero

Straight - derecho

Sum - suma

Surface - superficie

Symbol - simbolo

Therefore - por lo tanto

Tool - herramienta

Tube - tubo

Wire - alambre

Wrapped - envuelto

VOCABULARY LIST

ADVANCED MATH - MEASUREMENT

BK #8

Abbreviation - abreviatura

Additional - adicional

Answer - respuesta

Area - area

Attendant - asistente

Between - entree

Brick - ladrillo

Building - edificio

Cups - tazas

Diameter - diametro

Distance - distancia

Divided - dividio

Dots - puntos

Drove - manejo

Edge - orilla

Feet - pies

Fill - llenar

Force - fuerza

Glass - vidrio

Health - salud

Height - altura

Inches - pulgadas

Item - articulo

Jam - conserva

Lamp - lampara

Lawn - cesped,prado

Length - Longitud

Letters - cartas

Lines - lineas

Liquids - liquidos

Longer - mas largo

Measure - medir

Middle - medio

Miles - millas

Onions - cebollas

Ounces - onzas

Package - paquete

Paper - papel

Pint - pinta

Pipe - pipa

Plank - tabla

Potatoes - papas

Pounds - libras

Pour - vaciar

Pressure - presion

Quarts - cuartos

Radius - radio

Rate - proporcion

Rectangle - rectangulo

Remainder - sobrante

Rulers - reglas

Sack - saco

Scale - escala

Section - seccion

Short - corto

Straight - derecho

Strip - pedazo

Table - tabla

Tank - tanque

Tower - torre

Usually - usualmente

Water - agua

Weight - peso

Whenever - cuando

Width - anchura

Yard - yarda

VOCABULARY LIST

ADVANCED MATH - CONSUMER MATH

BK #9

ads - anuncios

afford - proveer

amount cantidad

another - otro

appliances - utensilios

average - promedio

bargain - trato

best - lo mejor

better - mejor

bone - hueso

brands - marcas de fabricas

budget - presupuesto

buying - comprando

carefully - cuidadoso

carelessly - descuidadosamente

change - cambiar

choice - seleccion

clerk - empleado

coins - monedas

colder - mas frio

column - columna

comparing - comparando

cotton - algodon

couch - sofa

decide - decidir

discount - descuento

dresses - vestidos

electricity - electricidad

enough - bastante

exchange - intercambio

expects - esperar

expenses - gastos

expensive - costoso

groceries - abarrotes

identical - identico

label etiqueta

lower - mas bajo

markets - mercados

measurements - medidas

month - mes

name - nombre

necessities - necesidades

newspaper - periodico

notebook - cuaderno

paint - pintura

piece - pedazo

price - precio

promise - prometer

quality - calidad

quantity- cantidad

same - mismo

selling - vendiendo

several - varios

shirt- camisa

shopping - comprando
shortening - manteca

shrink - encoger

slacks - pantalones

slicing - rebanando

specially - especialmente

spending - gastando

stale - rancio

store - tienda

stove - estufa

sturdier - mas fuerte

summer - verano

tasted - probado

thrifty - economico, frugal

treated - tratado

unit - unidad

value - valor

warranties - garantias

warmer - mas caliente

washing machine - maquina de lavar

winter - invierno

wool - lana

worst - mas peor

worth - vale

VOCABULARY LIST

ADVANCED MATH - PERSONAL MATH

BK #10

account - cuenta

afford - proveer

age - edad

agreement - acuerdo

already - ya

amount - cantidad

application - aplicacion

as soon as - tan pronto como

auto - carro

back - detras

bank - banco

based - basado

bedroom - recamara

before - antes

belongs - pertenece

bet - apostar

bicycle - bicicleta

bills - cuentas

boat - chalupa, lancha

boots - botas

borrow - pedir prestado

boss - patron

both - ambos, los dos

bother - molestar

bottom - fondo

broke - quebrado

budget - presupuesto

bureau - oficina

buy - comprar

car - carro

card - tarjeta

carefully - cuidadosamente

carrying charge - interes cobrado

cash - dinero contante

certain - seguro

chair - silla

change - cambio

charge - carga

cheat - engañar

check - cheque

clothes dryer - secadora

clothing - ropa

common - comun

compound -

contract - contrato

cost - costo

couch - sofa

credit - credito

dates - fechas

dealer - negociante

debt - deuda

decide - decidir

dining room - comedor

dog - perro

dive - zambullida, bucear

ADVANCED MATH - PERSONAL MATH

BOOK 10 Continued

down payment - enganche
dress - vestido
drugstore - botica
earn - ganar
employment - empleo
enough - bastante
everyone - todo mundo
everywhere - dondequiera
expense - gasto
fell - cayo
figure out - figurar
finance - financiar
fine print - letras chicas
fishing - pescando
food - comida
found - descubrir
full - llena
furniture - muebles
gas - gasolina
guitar - guitarra
hair - cabello
happen - suceder
heading - titulo
hiking - caminata
home - hogar
hurray - !viva!
hurt - lastimar
inside - interior
installment - abono
instead - en lugar de
jacket - chaqueta
jigsaw - rompecabezas
lake - lago
lamp - lampara
lend - prestar
less - menos
life - vida
loan - prestamo
longer - mas largo
lost - perdio
mattress - colchon
means - quiere decir
money - dinero
month - mes
mortgage - hipoteca
necessities - necesidades
never - nunca
November - Noviembre
offer - oferta
oil - aceite
overextend - sobrepasar
owe - deber
pawn - empeñar
pawnshop - tienda de empeño

payable - pagadero
pay cash - pagar al contado
payment - pago
pet - animal domestico
picked - escoger
plus - mas
price - precio
promise - prometer
rate - porcentaje
remainder - sobrante
rent - rentar
repay - pagar
right away - pronto
safer - mas seguro
same - mismo
save - ahorrar
service - servicio
set - juego
sewing machine - maquina de coser
shoes - zapatos
shop - tienda
shorter - mas corto
sign - señal, simbolo
simple - sencillo
slacks - pantalones
sooner - mas pronto
space - espacio
spending - gastando
sportswear - ropa deportiva
stop - parar
store - tienda
storm - tormenta
stove - estufa
stub - talon
summer - verano
sweater - sueter
swimmer - nadador
tag - etiqueta
term - termino
things - cosas
tip - punta
top - cuspide
trust - confiar
trying - tratando
under - debajo
unexpected - inesperado
unpaid - no pagado
usual - usual
vacuum cleaner - aspiradora
value - valor
wait - esperar
washing machine - maquina de lavar
week - semana
weekend - fin de semana
whole - entero
wife - esposa

window - ventana

wisely - prudentemente

worth - vale

yelling - gritando

VOCABULARY LIST

ADVANCED MATH - ADVANCED PERSONAL MATH

BK #11

abbreviation - abreviatura

able - poder

account - cuenta

address - domicilio

agent - agente

allowed - permitido

anyone - cualquiera

arrow - flecha

attached - unido

bank - banco

beneficiary - beneficiario

bill - cuenta; billete

black - negro

blank - en blanco

blind - ciego

booklet - folleto, librito

boss - patron

bother - molestar

bounce - botar

brother - hermano

buget - presupuesto

building - edificio

burn - quemar

call - llamar

cancel - cancelar

careless - descuidado

carrying charge - interes cobrado

cashing - cobrar

cents - centavos

certain - seguro

charge account - cuenta abierta

check - cheque

checkbook - libro de cheques

children - niños

citizens - ciudadano

claim - reclamar

cleared - cheques que se han cobrado

clerk - empleado, dependiente

closing - cerrando

coins - monedas

collision - choque

compounded - interes figurado

contribute - contribuir

cover - cubrir

credit - credito

damage - danar

date - fecha

daughter - hija

death - muerte

deductions - deduccion, rebaja

dependents - dependientes

deposit - depositar

digits - cifras, lugares

BOOK #11 Continued

dividends - dividendos
draw - sacar dinero de cuenta
drives - manejar
drop - gota
due - debido a
earning - ganando
employer - patron
endorse - endosar
endowment - dotacion
enough - bastante
envelop - sobre
exchanging - intercambiando
exemption - exencion
expenses - gastos
fault - culpa
file - registrar
funds - fondos
furnish - proveer
girl - muchacha
goods - mercancia
gross - salario total
guard - guarda
hardware - ferreteria
holding - reteniendo
honest - honesto
hospital - hospital
income - ingreso
injured - herido, lastimado
inspectors - inspectores
instead - en vez de
insufficient - insuficiente
insurance - seguranza
insure - asegurar
invest - invertir
jewelry - joyeria
job - trabajo
label - marca
law - ley
leave - omitir
less - menos
liability - responsabilidad
lifetime - vida
limited - limitado
little - poco
loan - prestamo
loose - suelto
loss - perdida
luckily - afortunadamente
made out - hecho para
mail - carta, correspondencia
mailbox - buzon
married - casado
match - igualar
maturity - madureza
meant - intentado
meantime - mientras tanto
mistake - error

mixer - liquadora

money order - giro postal

name - nombre

once - una vez

outstanding - cheque no cobrado todavia

overdrawn - cuenta sin fondos

owe - deber

owns - dueno, propietario

paycheck - cheque de salario

payee - persona que cobra cheque

payment - pago

phone - telefono

piece - pedazo

pole - poste

policy - poliza

postman - cartero

post office - correo

power - electricidad

price - precio

prove - probar

raised - levantado

reason - razon

records - registros

refund - reembolso

renew - renovar

repair - reparar

rich - rico

risk - riesgo

safe - seguro

salesgirl - vendedora

savings - ahorros

September - Septiembre

series - serie

serious - grave

service - servicio

share - compartir

shelter - refugio

shirt - camisa

sick - enfermo

sickness - enfermedad

sidewalk - vanqueta

sign - firmar

signature - firma

simple - sencillo

single - soltero

skidded - resbalar

slack - pantalon

slip - papel

smart - inteligente

spell - deletrear

statement - estado de cuenta

status - estado

stolen - robado

straight - derecho

stub - talon

support - apoyar

suppose - suponer, sostener

tax - impuesto

taxpayer - pagador de impuestos

theft - robo

thieves - rateros, ladrones

ticket - boleto

tie - corbata

traffic - trafico

truck - camion

twice - doble

unexpected - inesperado

unless - a menos que

unused - sin usar

value - valor

wages - salario

wait - esperar

wife - esposa

withdraw - sacar dinero de cuenta

withholding - retener impuesto sobre ingreso

worth- vale

worthless - invalido

VOCABULARY LIST

ADVANCED MATH - ADVANCED PERSONAL

MATH, BK #12

always - siempre

another - otro

beside - al lado de

bottom - fondo

complicated - complicado

each - cada

equation - equacion

expression - expresion

false - falso

following - lo siguiente

greater - mas grande

inequality - desigualdad

instead - en vez de

last - ultimo

less - menos

replace - reponer

result - resultado

short cut - manera mas corta

side - lado

solved - resuelto

step - paso

sum - suma

symbols - simbolos

true - cierto

written - escrito

wrote - escribio

VOCABULARY LIST

ADVANCED MATH - USING ALGEBRA

BK #13

bakery - panaderia

borrowed - prestado

brother - hermano

commission - comision

consecutive - consecutivo

cups - tazas

day - dia

dimes - diez centavos

discount - descuento

dollar - dolar

down payment - enganche

dress shop - tienda de vestidos

equals - equivale, igual a

equation - equacion

equipment - equipo

expressions - expresiones

feet - pies

Friday - viernes

furnish - proveer

garage - garaje, taller

gas station - gasolinera

hamburger - hamburguesa

house - casa

inches - pulgadas

instead - en vez de

invested - invertido

itself - si mismo

labor - obra

loan - prestamo

magazines - revistas

marked - marcado

mile - milla

minus - menos

minutes - minutos

Monday - lunes

months - meses

next - siguiente

nickel - 5 centavos

numerals - numeros

ordinarily - ordinariamente

ounces - onzas

owners - duenos

performing - haciendo

pint - pinta

phrase - frase

plus - mas

pound - libra

price - precio

profits - ganancias

quarter - cuarto

quarters - 25 centavos

refrigerator - refrigerador

rewrite - escribir de nuevo

salary - sueldo

salesman - vendedor

Saturday - sabado

save - ahorrar

seconds - segundos

share - compartir

signs - señales, simbolor

simplify - simplificar

solving - resolviendo

stand - representar

statements - estado de cuentas

therefore - por lo tanto

Thursday - jueves

times - por; veces

trouble- problema, molestia

truck - camion

Tuesday - martes

twice - doble

unknown - desconocido

Wednesday - miercole

week - semana

yard - yarda

year - año

VOCABULARY LIST

ADVANCED MATH - USING GEOMETRY

BK #14

Adjacent - adyacente

Airplane - avion

Airport - aeropuerto

Altitude - altitud

Angle - angulo

arrow - flecha

Bed - cama

beyond - mas alla

Bicycle - bicicleta

Both - ambos, los dos

Bottom - fondo

Cabin - cabaña

Canvas - lona

Capital letters - letras mayusculas

Center - centro

Chord - acorde

Circular - circular

Circumference - circumferencia

Circus - circo

Complementary - complementario

Concrete - Concreto

Confusion - confusion

Consecutive - consecutivo

Corner - esquina

Corn field - campo de maiz

Crooked - torcido

Cubic - cubico

Degrees - grados

Designate - designar

Desk - escritorio

Diagonal - diagonal

Diameter - diametro

Dot - punto

Drawing - dibujo

East - este

Edge - orilla

Either - uno u otro

Enclosed - cercado

Endpoints - puntos terminales

Equator - ecuador

Equivalent - equivalente

Extend - extender

Facts - datos, hechos

Feet - pies

Fenching - cercado

Figure - figura

Fishing - pescando

Fixed - fijo

Flat - plano

Floors - pisos

ADVANCED MATH - USING GEOMETRY
BOOK #14 Continued

Football - futbol

Hexagon - hexagono

Hypotenuse - lado opuesto al angulo de 90 grados

Inches - pulgadas

Interior - interior

Intersect - cruzar

Isosceles - triangulo con lados iguales

Joined - unido

Kitchen - concina

Labeled - marcado

Landing - aterrizar

Length - longitud

Letter - letra

Level - nivel

Line - linea

Living room - sala

Location - sitio

Lot - lote

Measure - medir

Miles - millas

Mountain - montaña

North - norte

Notice - fijese

Obtained - obtener

Octagon - octagono

Only - solo, solamente

Opposite - opuesto

Parallel - paralelo

Park - parque

Parking lot - lote de estacionamiento

Pasture - pasto

Peak - cima

Pebble - piedrecita

Pentagon - pentagono

Perimeter - perimetro

Picnic - dia de campo

Pilot - pilote

Point - punto

Pond - charca

Rectangle - rectangulo

Rocky - rocoso

Ruler - regla

Sail - vela

Sand - arena

Sanded - lijar

Sea - mar

Segment - segmento

Set - juego

Shape - forma

Sheet - hoja

Side - lado

Sidewalk - vanqueta

Small letters - letras minusculas

Soccer - soquer

Solid - solido

Square - cuadro

Storm - tormenta

Straight - derecha

String - cuerda, cordon

Surface - superficie

Swimming pool - alberca

Symbol - simbolo

Table - mesa

Therefore - por lo tanto

Thickness - grueso

Tin can - lata

Track - pista

Transversal - transversal

Travel - viajar

Triangle - triangulo

Units - unidades

Vertex - vertice

Vertical - vertical

Volume - volumen

West - poniente

Wheel - rueda

Width - anchura

Window pane - vidriera

Wish - desear

Without - sin

Yard - yarda

VOCABULARY LIST

ADVANCED MATH TRIGONOMETRY

BK #15

Abbreviation - abreviatura

Adjacent - adyacente

Airplane - avion

Already - ya

Building - edificio

Called - llamado

Capital letters - letras mayusculas

Choose - escoger

Complementary - complementario

Compute - computar

Constant - constante

Corresponding - correspondiendo

Decrease - disminuir

Degrees - grados

Designate - designar

Dots - puntos

Elevation - elevacion

End points - puntos terminales

equal - igual

Feet - pies

Finish - terminar

Fixed - fijo

Flagpole - poste de bandera

Function - funcion

Greater - mas grande

Height - altura

Inches - pulgadas

Increase - aumentar

Keeping - reteniendo

Label - marca

Lake - lago

Land - aterrizar

Left - mano izquierda

Length - longitud

Less - menos

Lies - estar situado

Line - linea

Listed - apuntado

Location - sitio

Means - quiere decir

Measure - medir

Middle - medio

Miles - millas

Mixed - mixto

Mountain - montaña

Opening - abertura

Opposite - opuesto

Path - camino

Place - lugar, ponga

Pond - charca

Post - poste

Ratio - porporcion

Rays - rayos

Reason - razon

Reciprocal - recipocro

Remain - permanecer

Right - derecho

Runway - pista de aterrizaje

Segment - segmento

Shadow - sombra

Shrub - arbustos

Since - desde que

Size - tamaño

Slightly - poco

Small letters - letras minusculas

Solve - resolver

Straight - derecho

Sun - sol

Suppose - suponer

Terms - terminos

Therefore - por lo tanto

Tower - torre

Tree - arbol

True - cierto

Twice - doble

Value - valor

Vary - variar

Vertex - vertice

While - mientras

Wire - alambre

Yards - yardas

MATH GAMES

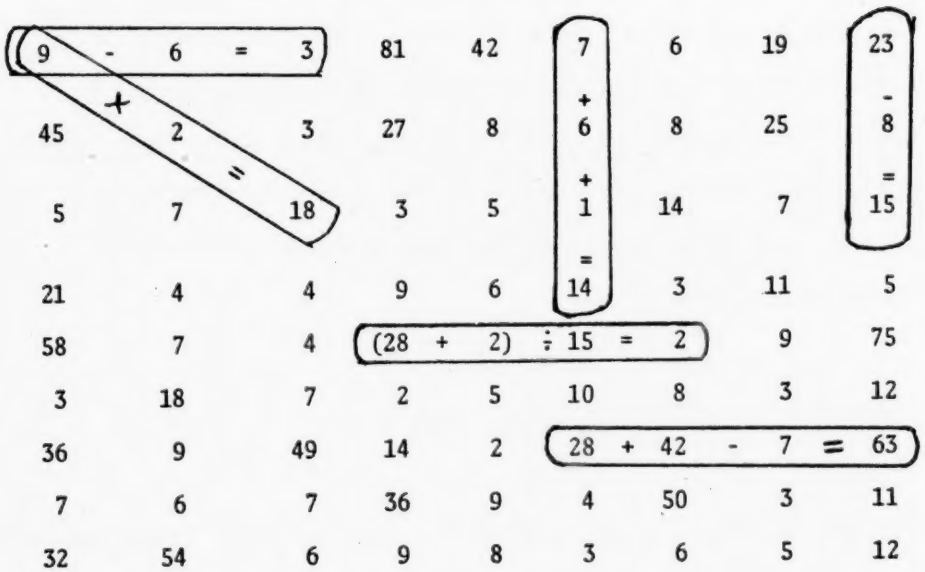
Math games presented below have been adapted from two books by Stephen Krulik: A Mathematics Laboratory Handbook for Secondary Schools and A Handbook of Aids for Teaching Junior-Senior High School Mathematics. Centers may wish to purchase copies by writing the publisher: W. B. Saunders, West Washington Square, Philadelphia, Pennsylvania 19105.

Number Grids

This mathematic grid can be used to stimulate thought and enjoyment on the part of the students and provides a review drill in the fundamental operations of arithmetic. The grid is simply an array of numbers. Each student is given a xerox or ditto copy of the grid. The student is to discover any true mathematical statement within the grid by inserting the operational symbols and the equality symbol. Parentheses may also be used. Numbers may be used more than once. Statements can be made horizontally, vertically and diagonally.

Students using the grid will often notice involved mathematical concepts such as inverse operations ($6 \times 4 = 24$ or $6 = 24 \div 4$), and commutative, associative, and distributive laws. The sample grid on the following page shows a number of possible solutions.

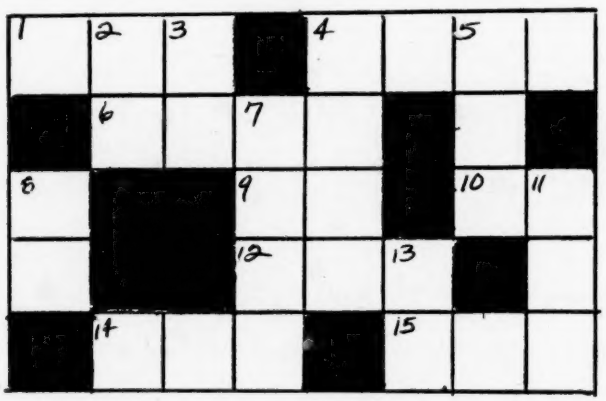
Number Grid


9 - 6 = 3
81 42 7 6 19 23
+ -
45 2 3 27 8 6 8 25 8
= +
5 7 18 3 5 1 14 7 15
=
21 4 4 9 6 14 3 11 5
58 7 4 (28 + 2) ÷ 15 = 2 9 75
3 18 7 2 5 10 8 3 12
36 9 49 14 2 28 + 42 - 7 = 63
7 6 7 36 9 4 50 3 11
32 54 6 9 8 3 6 5 12

Cross Number Puzzles

Math teachers often seek constructive activities that students can participate in when they finish assigned work before the rest of the group. The students may work the cross number puzzle which involves a single operation only. On the following pages are an addition, subtraction, and multiplication cross number puzzle. The student writes on the Across rows and in the Down columns the corresponding answer for each numbered problem. Each puzzle is worked in the same manner as a cross-word puzzle, except that numbers are used instead of words.

Addition: Cross Number Puzzle



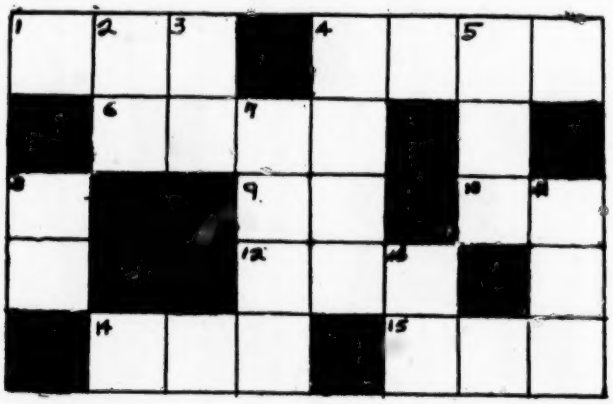
ACROSS

1. 28 + 87 + 133 + 42 + 142
4. 1,327 + 1,327
6. 587 + 932 + 857 + 265
8. 4 + 2
9. 12 + 9 + 7
10. 18 + 12 + 7
12. 84 + 96 + 252 + 181 + 128
14. 126 + 42 + 24 + 18 + 20 + 12 + 10
15. 123 + 98 + 201 + 36

DOWN

2. 18 + 14
3. 9 + 7 + 5 + 3 + 2
4. 1024 + 1024 + 136
5. 47 + 83 + 97 + 184 + 67 + 45
7. 2,136 + 1,068 + 534 + 267 + 26
8. 17 + 32 + 10 + 9
11. 252 + 183 + 197 + 116
13. 6 + 4 + 4

Subtraction: Cross Number Puzzle



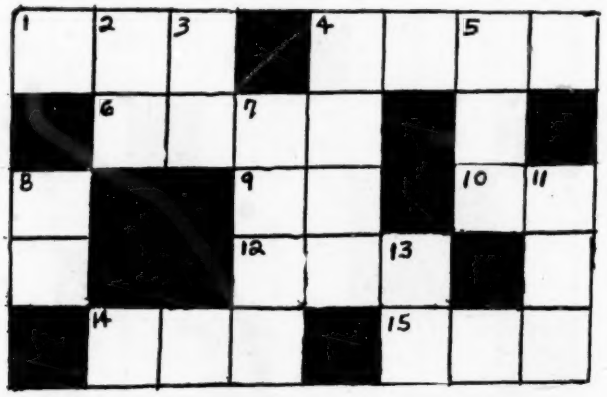
ACROSS

1. 2554 - 2303
4. 18444 - 16747
6. 4262 - 2131
8. 346 - 339
9. 1844 - 1822
10. 273 - 231
12. 350 - 100
14. 846 - 224
15. 224 - 112

DOWN

2. 175 - 123
3. 109 - 98
4. 5346 - 4221
5. 5822 - 4908
7. 6444 - 3222
8. 97 - 23
11. 578 - 346
13. 34 - 33

Multiplication: Cross Number Puzzle



ACROSS

1. 65×5
4. 2857×2
6. $4 \times 59 \times 7$
8. 2×2
9. 9×9
10. 41×2
12. 151×5
14. 145×3
16. $80 \times 4 \times 2$

DOWN

2. 3×7
3. $4 \times 7 \times 2$
4. 1043×5
5. $3 \times 22 \times 3$
7. 25×235
8. $3 \times 7 \times 2$
11. 130×2
13. $7 \times 2 \times 4$

Fraction "War" Card Game

This is a card game that can be used successfully to review and strengthen work in fractions, especially in comparing their size. It involves finding a common denominator and changing the given fractions to equivalent fractions. The game can be played by two, three, or four students at one time.

The deck of cards consists of 66 cards, each approximately 3 inches by 2-1/2 inches in size. These cards can be made from cardboard or by cutting ordinary 3 by 5 inch file cards in half. On each card, one of the following 66 common fractions is written:

$\frac{1}{2}, \frac{1}{3}, \frac{2}{3}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}, \frac{1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}, \frac{1}{7}, \frac{2}{7}, \frac{3}{7},$

$\frac{4}{7}, \frac{5}{7}, \frac{6}{7}, \frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}, \frac{6}{8}, \frac{7}{8}, \frac{1}{9}, \frac{2}{9}, \frac{3}{9}, \frac{4}{9}, \frac{5}{9}, \frac{6}{9}, \frac{7}{9}, \frac{8}{9},$

$\frac{1}{10}, \frac{2}{10}, \frac{3}{10}, \frac{4}{10}, \frac{5}{10}, \frac{6}{10}, \frac{7}{10}, \frac{8}{10}, \frac{9}{10}, \frac{1}{11}, \frac{2}{11}, \frac{3}{11}, \frac{4}{11}, \frac{5}{11}, \frac{6}{11}, \frac{7}{11}, \frac{8}{11}, \frac{9}{11},$

$\frac{10}{11}, \frac{1}{12}, \frac{2}{12}, \frac{3}{12}, \frac{4}{12}, \frac{5}{12}, \frac{6}{12}, \frac{7}{12}, \frac{8}{12}, \frac{9}{12}, \frac{10}{12}, \frac{11}{12}.$

Each player has some scratch paper and a pencil with which to make his computations.

How to play the game:

1. The deck is shuffled and dealt face down to the players in turn until all the cards have been distributed.
2. Each player keeps his cards face down in front of him.
3. Each player turns his top card face up.
4. The players must then decide which card shows the fraction having the greatest value. Pencil and paper is used for this.

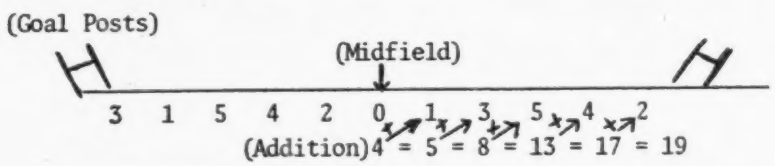
5. The player whose card has the fraction with the highest value takes all the cards that were turned up and places them face down at the bottom of his pack of cards.

6. In the event of a tie, for example, two equivalent fractions are turned up such as $\frac{2}{3}$ or $\frac{8}{12}$, a " war" is declared. Each of the players involved in the "war" places the next three cards from his pack face down and turns over the fourth card. The person with the fraction of highest value now showing takes all the cards involved in the "war".

7. Play continues in a similar manner until one player has lost all his cards, or until time is called. In this latter case, the winner is the player with the most cards at the end of the time period.

Math Football

This is an exciting and competitive game which may be played by an entire class of students, from four to as many as is desired and practical. The purpose of the game is to review the addition and multiplication operations in an interesting and appealing way. The teacher selects a scorekeeper, a timekeeper, and a referee from among the students and the rest of the students are divided into two opposing "football teams". The teacher selects two team captains, one from each team, who announces the football team's name, and who states "heads or tails" to the referee's flip of the coin deciding who will start the game. There is a 20 second time limit for each player. Before the game starts, the referee draws on the blackboard the following sketch of a football field:



A single arithmetic operation is played in each game, either addition or multiplication. One player from the starting team goes to the blackboard, stands in front of the sketch and starts the game. He is given a number by the referee. He must add that number to the number to the right or left of zero, depending on which direction his team decides to carry the "football" or number. He must add orally in an addition game the given number correctly to the five numbers to his right or left in a cumulative order, writing only the answer at the goalpost within twenty seconds in order to score a "touchdown" or point for his team. In a multiplication game, the same procedure is followed using the multiplication operation. If the player does not finish adding or multiplying the last number within the twenty

second time limit, his team loses the "ball" and the opposing team "recovers" it at the point it was lost. From there it proceeds towards the goal post in the opposite direction with the same time limit imposed.

In case the ball carrier at the blackboard adds or multiplies incorrectly, the opposing team must be ready to catch his error and orally say "interception". If the ball carrier has made an error, his team loses the ball; the opposing team takes possession of it and proceeds in the opposite direction toward the goal. If the original ball carrier has not made an error, he is given ten extra seconds in addition to the time he had remaining when "interception" was called. The game can be played on a point or time basis, that is, the winning team being the one first obtaining a predetermined number of points or possessing the greater number of points after a predetermined time period.

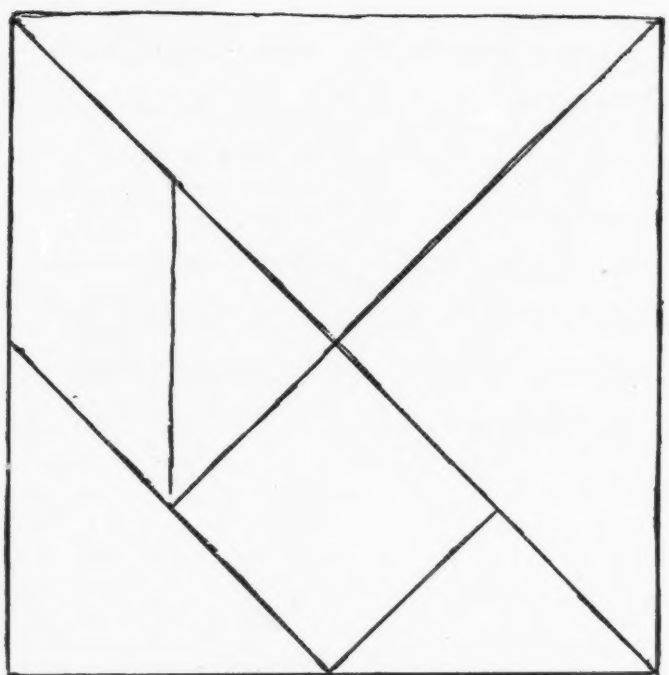
Chinese Tangram Puzzle

This is probably one of the oldest mechanical puzzles of ancient China. It has been known in the Orient for several thousand years and provides a great deal of work with spatial relationships in introductory courses in geometry.

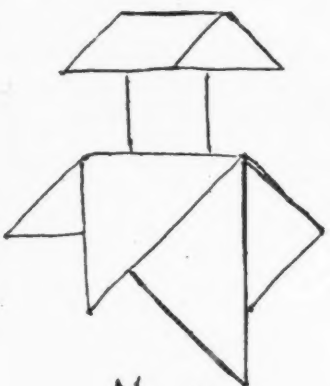
The tangram is made by cutting a large square as shown on the following page. Seven pieces form the tangram set. The set can be prepared on a ditto master and duplicated on light cardboard or construction paper.

The basic rule of the tangram puzzle is that all seven pieces must be used to assemble the tangram into some familiar geometric shape such as the square, triangle, chinese coolie bowing, Napoleon, scotch terrier, and dog jumping as shown on the following page. The students are encouraged to use their imaginations in creating other designs.

Chinese Tangram Puzzle Geometric Figures

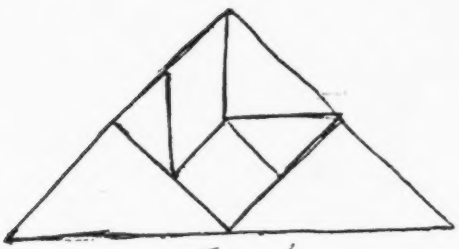


Square

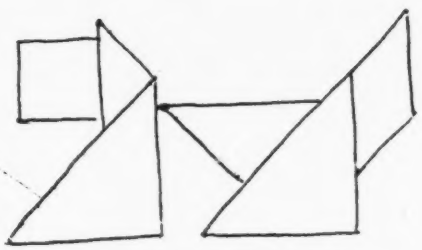


Napoleon

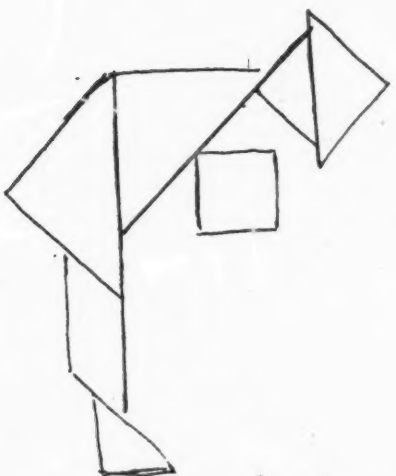
Chinese Tangram Puzzle Geometric Figures



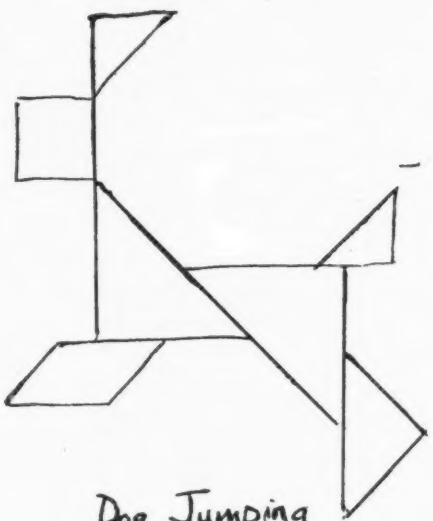
Triangle



Scotch Terrier



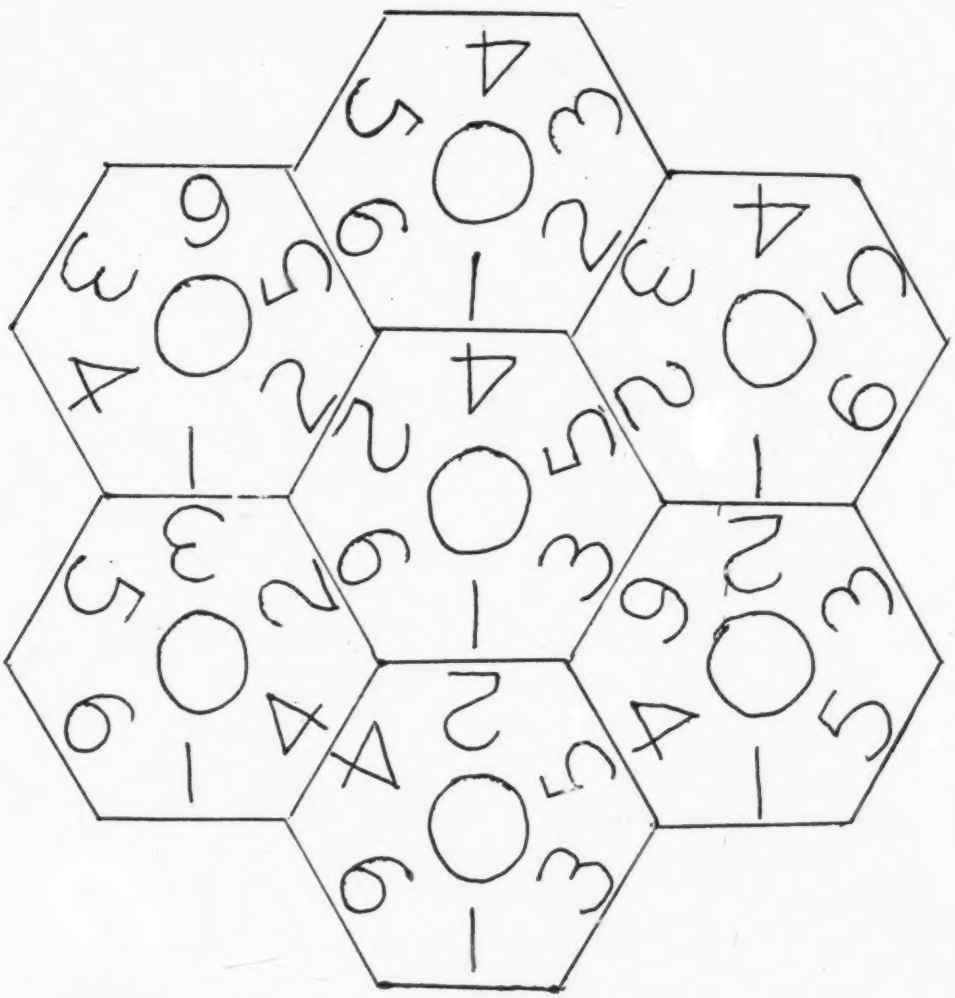
Chinese coolie bowing



Dog Jumping

"Drive You Nuts" Math Game

This game is made by cutting out the hexagonal shaped nuts shown below, shuffling them and placing them in the pattern below, except that adjacent sides must have matching numbers. That is, all sides that are in contact must have matching numbers.



READING PROJECT

Peter Jurado

It is generally recognized that Spanish-speaking corpsmen are often handicapped by unique reading difficulties atypical from those of the general Job Corps population.. My efforts in the 1972 summer tutorial program were primarily devoted to providing individualized and small group instruction to a selected group of corpsmen at the El Paso Residential Manpower Center who had been identified as possessing exceptional reading problems because of difficulty with the English language. A comparison was then drawn between reading progress achieved by this group of corpsmen as compared to that of a control group of corpsmen with similar reading difficulties who did not receive special tutorial assistance. An outgrowth of this work was the development of a variety of tutorial techniques and supplementary activities and materials. These are described herein.

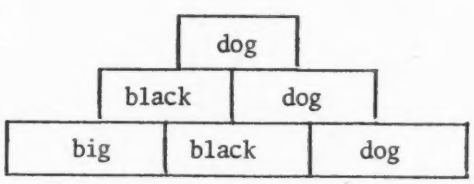
One device used to improve reading ability was the experience chart. The instructor or tutor records on the blackboard experiences and/or ideas surrounding a specified subject or topic which are contributed orally by corpsmen in the group. For example, one topic used was "things I like about the Job Corps Center". As the teacher records the expressed ideas of the students, they are, of course, written in correct English form.

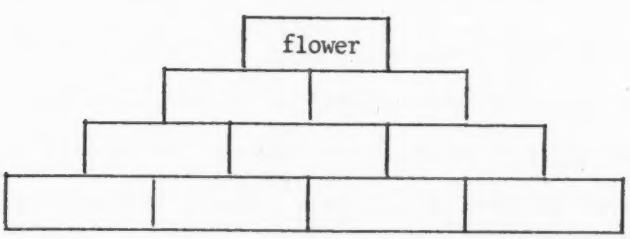
These experience charts offer the students an invitation to verbalize practical "real" language, as well as seeing it written and hearing it spoken. An additional benefit is derived from their exposure to proper English sentence structure. Students also receive practice in organizing ideas and are able to see their contributions to a meaningful group activity.

Experience charts can also be made by using pictures to record ideas and experiences. This type of chart can easily be bound into booklets with simple, construction paper covers, which can be displayed in the classroom for sharing with other corpsmen. Objectives for such a project are to help students to:

1) write neatly and legibly;
2) organize ideas in sequential patterns;
3) use accurate word meanings;
4) find ways to use newly acquired words;
5) use clear, sound sentence structure; and
6) understand that books are written to serve many diffrent purposes.

A second technique found to be effective in improving the reading ability of these corpsmen was the use of word pyramids. These pattern drills are built with words in pyramid form, beginning at the top rather than at the bottom.





Another teaching method used was the assignment of incomplete sentences for students to complete, being particularly certain to use words that are relevant to daily living for corpsmen in the center. These sentences were dictated orally by the instructor, spelling unfamiliar words. Student papers were then corrected and exhibited in booklet form so as to provide high-interest level materials for corpsman reading.

In some small group sessions, approximately fifteen to twenty words were listed on the blackboard. Some were sight words and some were those of current interest to the group. Students then competed with each other in formulating as many complete sentences as possible, using only this word list.

In reading English, many native Spanish-speakers are able to understand word meanings,but have difficulty with proper pronunciation. This problem appears not to be sufficiently remedied in learning to read through the use of Sullivan programmed materials which do not stress the sounds of the English language. Emphasis needs to be placed on English sounds as contrasted with those in Spanish. Flash cards were made which contained particularly troublesome sounds. These are listed below.

1) The ir sound in words such as bird, purple and dirt.
   Spanish speakers generally pronounce ir as an or.
2) The ch sound in words such as champ, chair, and chain.
   Spanish speakers pronounce ch as a kind of sh sound.
3) The sh sound in words such as shine, shoe and shake.
   Spanish speakers pronounce sh as a soft ch sound.

4) The y sound in words such as yankee, yes, and yesterday. Spanish speakers pronounce y as a j sound.

5) The soft th sound found in words such as think, thumb and Thursday. Spanish speakers pronounce th as a t sound.

6) The hard th sound in words such as the, this, that, and then. Spanish speakers pronounce this th as a d sound.

7) The j sound in words like Jack and jump. Spanish speakers pronounce j as a y sound.

8) The v sound found in words such as voice, very and vase. Spanish speakers from this area pronounce v as a b sound.

9) The u sound in words such as up and under. Spanish speakers pronounce u as an o sound.

10) The short i sound found in words such as sister, mister, and nickel. Spanish speakers tend to substitute a long i since there is no short i in Spanish.

11) The g sound found in words such as get, good, and grape. Spanish speakers tend to substitute a soft g because the the Spanish g is much softer than the English g.

12) The z sound found in words such as zebra, zoo and zipper. Spanish speakers substitute an s sound.

SIGHT WORD GAMES

Sight words were taught to corpsmen in the experimental group through the use of games. Since the majority of corpsmen in the center's Beginning Reading classes are non-English speakers, a written Spanish translation of the sight words was given to the students before they participated in the games. These vocabulary lists are included in the next section of this report.

Surprise Game

Cards with sight words written on them are placed face down. Each student takes his turn at turning up a "surprise". If he knows the meaning of the word and can pronounce it correctly, he may keep the card. If he ddes not, he replaces the card face down, shuffling its position among the others on the table. When all the cards are held by participating students, the one having the most cards is named the winner.

Ladder Game

The sight word cards are arranged in packs of ten. Each corpsman receives one pack and is asked to make a ladder with them. He chooses a card having a word that he can pronounce and define as the first rung of his ladder, continuing to add as many rungs as he can by pronouncing and defining the words on his remaining cards. The student building the highest ladder wins. Other students may challenge the winner by attempting to go up or down the ladder by pronouncing and defining the words in their respective order.

Two-Team Race Game

The corpsman group is divided into two teams. The sight word cards are presented by the teacher to each student, proceeding alternately from one team to the other in the manner of a spelling bee. The student is required to pronounce and define the word or be eliminated from the race. The team having the last member participating in the race is declared the winner.

VOCABULARY LIST

GROUP I

come - venir

it - (pronomber neutro) lo; la; ello; el; ella (referiendose a cosa o animal)

do - hacer

make - hacer

for - para

little - chiquito

eat - comer

too - tambien

run - correr

where - donde

down - abajo

in - en, dentro de

I - yo

know - saber, conocer

said - dijo

then - entonces

will - verbo auxiliar (indicacion del futuro)

a - un, una

him - le; lo; el

who - quien

one - uno

two - dos

three - tres

my - mi

of - de

to - hasta; a; hacia; para

are - ser o estar (plural)

VOCABULARY LIST

GROUP I

Be - ser o estar

Get - obtener; agarrar

Your - su, de Ud.

And - y

Did - hacer (tiempo pasado)

Go - ir

What - que

Big - grande

You - Ud.; Uds.

Not - no (negative)

Can - poder; bote

The - el; la; lo; los; las

House - casa

Play - jugar

Away - lejos; fuera

But - pero

No - no

Good - bueno

Here - aqui

Have - tener

Look - mirar

His - de el (su)

Her - de ella (su)

Put - poner

Has - tiene

Like - gustar

We - nosotros

VOCABULARY LIST
GROUP II

could - pudíera

day - dia

an - un, una

yes - si

up - arriba

so - asi, tan, muy, tanto

time - tiempo

was - ser o estar (tiempo pasado)

saw - mirar (tiempo pasado); serrucho

around - alrededor

ride - pasear

take - tomar, llevar

find - hallar

want - querer; desear

when - cuando

them - ellos; ellas; les; las; los

us - nosotros

something - algo;alguna cosa; un poco

had - tener (tiempo pasado)

way - via; camino; ruta; senda; modo, manera

ran - correr (tiempo pasado)

is - ser o estar

all - todos

jump - brincar

green - verde

man - hombre

stop - alto, parar

VOCABULARY LIST

GROUP II

Help - ayuda

they - ellos

mother - mama

other - otro; otra cosa que; mas que

funny - chistoso, gracioso

let - dejar

may - poder; mayo

he - el

red - rojo

blue - azul

old - viejo

after - despues

very - muy

tree - arbol

see - ver

now - ahorita, en este momento

she - ella

call - llamar

went - fue (tiempo pasado de ir)

some - algunos

would - verbo auxiliar (indica condicion)

how - como

there - alla; alli; ahi

as - mientras; como; a medida que; segun; en el momento que

sat - sentar (tiempo pasado)

over - sobre arriba

from - de; desde

am - soy, estoy

on - sobre

by - cerca de, al lado de; junto; segun

came - venir (tiempo pasado)

about - acerca de; tocante de; cerca de; por; casi; poco mas o menos

back - detras; espalda

give - dar

me - mi, me

VOCABULARY LIST

GROUP III

Again - otra ves

Any - alguno; cualquier (a)

Ask - Preguntar

At - en; a; en (la) casa de

Ate - comer (tiempo pasado)

Ball - pelota

Been - ser; estar (tiempo pasado)

Before - antes

Better - mejor

Black - negro

Boy - muchacho

Brown - Cafe

Buy - Comprar

Cold - frio

Color - color

Dog - perro

Far - lejos

Fast - recio

Five - cinco

Four - cuatro

Fun - diversion, burla, broma, chanza

Girl - muchacha

Got - obtener (tiempo pasado)

High - alto

Happy - contento

If - si

Into - en; dentro de; hacia el interior

Just - justo; ni mas ni menos; exactamente; solo; no mas; nada mas; apenas

Laugh - reir

Light - luz

Long - largo

Mr. - Señor

More - mas

Morning - mañana

Much - mucho

Must - deber

Name - nombre

Never - nunca

New - nuevo

Night - noche

Or - o; u

Out - fuera; afuera; hacia fuera

Please - por favor

Party - fiesta

Pretty - bonito

Pull - jalar

Rabbit - conejo

Read - leer

Shall - verbo auxiliar que indica el futuro

VOCABULARY LIST

GROUP III

Sleep - dormir

Soon - pronto

Stand - parar

Tell - decir

Than - que

Thank - gracias

Their - de ellos

These - estos

Think - pensar

Under - debajo

Walk - andar

Well - bien; bueno; bien de salud; sano

Were - ser o estar (tiempo pasado)

White - blanco

Why - por que?

With - con

Work - trabajar

Yellow - amarillo

VOCABULARY LIST

GROUP IV

Always - siempre; todo el tiempo

Another - otro

Because - Porque; por; a causa de

Best - mejor; lo mejor

Book - libro

Both - los dos

Box - caja

Bring - traer

Carry - llevar; acarrear; transportar

Clean - limpio

Cut - cortar

Does - hacer

Each - cada; cada uno

End - fin; termino; extremo

Every - cada; todo; todos los

Fall - Caer; otono

First - primero

Found - hallar

Friend - amigo

Full - lleno

Gave - dar (tiempo pasado)

Going - llendo

Grow - crecer

Hand - mano

Hold - tener; detener; sostener; ocupar (un puesto)

Home - hogar

Hot - caliente

Hurt - hacer daño; herir; doler

Keep - guardar; tener; mantener

Kind - bondadoso; clase; especie

Last - ultimo; durar

Left - quedar (tiempo pasado)

Live - vivir

Made - hacer (tiempo pasado)

Many - muchos

Men - hombres

Near - cercas

Next - proximo; siguiente

Once - una vez, en otro tiempo

Only - solo; solamente

Open - abrir

Our - nuestro

Own - propio (mandar)

Pick - levantar

Right - derecha

Round - redondo

Say - decir

School - escuela

Should - verbo auxiliar que indica condicion

VOCABULARY LIST

GROUP IV

Show - ensenar; mostrar; presentacion

Sit - sentar

Six - seis

Start - empezar

Sure - seguro

Ten - diez

Thing - cosa

Those - aquellos

Together - juntos

Until - hasta

Warm - caliente; acalorado

Which - cual

While - mientras

Wish - desear

Year - año

VOCABULARY LIST

GROUP V

Dear - querido; amado

Done - hecho

Drink - tomar

Most - mas; sumamente

People - gente

Present - presente; regalo

Seem - parecer

Seven - siete

Sing - cantar

Small - chico

Such - semejante

Today - hoy

Try - probar; hacer la prueba; intentar

Use - uso; utilidad

Wash - Lavar

Write - escribir

VOCABULARY LIST

GROUP VI

Also - tambien; ademas

Don't - no hacer

Draw - pintar

Eight - ocho

Goes - ir (el o ella)

Its - su; de el

Leave - dejar; abandonar; partir; irse

Myself - yo mismo

Upon - en; sobre; encima de

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